

WHAT IS CLAIMED IS:

1. A data processing system comprising:
  - at least one special purpose data processing unit for executing a series of predetermined data processes by a special purpose instruction; and
  - a general purpose data processing unit for executing processes designated by general purpose instructions,
    - wherein the special purpose data processing unit has a dedicated circuit portion specialized in specific data processes and a sequence control portion that supplies the dedicated circuit portion with control signals to control the dedicated circuit portion in accordance with a predetermined processing procedure, and
    - wherein the general purpose data processing unit is able to control the dedicated circuit portion in accordance with a procedure different from the processing procedure preset in the sequence control portion.
- 15 2. A data processing system according to claim 1,
  - wherein the general purpose data processing unit is able to supply the dedicated circuit portion with control signals superseding the control signals supplied from the sequence control portion, and
  - 20 wherein the special purpose data processing unit has a selection means for supplying the dedicated circuit portion with selected control signals among the control signals supplied from the sequence control portion and the control signals supplied from the general purpose data processing unit.
- 25 3. A data processing system according to claim 1,
  - wherein the general purpose data processing unit is able to change the processing procedure set in the sequence control portion.
4. A data processing system according to claim 1, further comprising:
  - 30 a fetch unit for fetching the special purpose instruction and the general purpose instructions from a recording means where a program having the special purpose instruction

and the general purpose instructions are recorded and for supplying the special purpose data processing unit with the special purpose instruction.

5. A data processing system according to claim 4,

5 wherein the general purpose data processing unit is able to supply the dedicated circuit portion with control signals superseding the control signals supplied from the sequence control portion based on at least one of the general purpose instructions, and

10 wherein the special purpose data processing unit has a selection means for supplying the dedicated circuit portion with selected control signals among the control signals supplied from the sequence control portion and the control signals supplied from the general purpose data processing unit.

6. A data processing system according to claim 5,

15 wherein the selection means is controlled by the general purpose data processing unit.

7. A data processing system according to claim 4,

20 wherein the general purpose data processing unit changes the processing procedure set in the sequence control portion according to at least one of the general purpose instructions.

8. A control method of a data processing system comprising at least one special data

processing unit for executing a series of predetermined data processes by a special purpose instruction and a general purpose data processing unit for executing processes designated by 25 general purpose instructions, wherein the special purpose data processing unit has a dedicated circuit portion specialized in specific data processings and a sequence control portion that supplies the dedicated circuit portion with control signals to control the dedicated circuit portion in accordance with a predetermined processing procedure, comprising:

30 a first step of supplying the dedicated circuit portion with a series of the control signals by the special purpose instruction in accordance with the processing procedure preset in the sequence control portion and controlling the dedicated circuit portion; and

a second step of controlling the dedicated circuit portion by at least one of the general purpose instructions in accordance with a procedure different from the processing procedure preset in the sequence control portion.

5    9.    A control method according to claim 8,  
      wherein, in the second step, control signals superseding the control signals of the sequence control portion are supplied to the dedicated circuit portion based on at least one of the general purpose instructions.

10    10.    A control method according to claim 8,  
      wherein, in the second step, the processing procedure preset in the sequence control portion is changed.

15    11.    A program product for controlling a data processing system, the program product has general purpose instructions for a general purpose data processing unit and a special purpose instruction for a special purpose data processing unit comprising a dedicated circuit portion specialized in specific data processings and a sequence control portion that supplies the dedicated circuit portion with control signals to control the dedicated circuit portion in accordance with a predetermined processing procedure,

20           wherein the special purpose instruction is an instruction to supply the dedicated circuit portion with control signals in accordance with a preset processing procedure in the sequence control portion and to control the dedicated circuit portion, and

25           wherein, as the general-purpose instructions, a priority instruction to control the dedicated circuit portion in accordance with a procedure different from the processing procedure preset in the sequence control portion is provided.

12.    A program product according to claim 11,  
      wherein the priority instruction is an instruction that is converted into control signal superseding the control signals supplied from the sequence control portion and that is then supplied to the dedicated circuit portion.

13. A program product according to claim 11,  
wherein the priority instruction is an instruction to change the processing procedure  
preset in the sequence control portion.